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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,573	07/07/2005	Shigeyuki Hatori	TKI-006	7813
20374 7590 01/24/2007 KUBOVCIK & KUBOVCIK SUITE 710 900 17TH STREET NW WASHINGTON, DC 20006			EXAMINER LEE, GILBERT Y	
			ART UNIT	PAPER NUMBER
			3673	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/24/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/541,573	Applicant(s) HATORI, SHIGEYUKI	
	Examiner Gilbert Y. Lee	Art Unit 3673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/705</u> | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the Brief Description of Fig. 2 discloses that it is "...a partial side view in which an inner circumferential surface of the seal ring..." However, upon review of Figs. 1 and 5, Fig. 2 should actually be a partial top or bottom view in which an axial surface of the seal ring is developed.

Appropriate correction is required.

Claim Objections

2. Claim 3 is objected to because of the following informalities: line 6 recites "(a1-L)". Although reference characters a1 and L are claimed in claim 2, the reference characters are not claimed in claim 1, which claim 3 depends from. Appropriate correction is required.

3. Claims 4 and 6-8 are objected to because of the following informalities: line 5 in each of the claims recites "a number of the concave portions is in the range from 4 to 16." It is unclear to the examiner as to what the applicant is claiming. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 3 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2, 3, and 5 recited the range of the first and second inclined portions. It is unclear to the examiner as to where the angles are referenced from. For instance since the inclinations extend from one surface to another, the angle could be taken from the pressure receiving surface or the inner circumferential surface of the seal.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Dickey et al. (US Patent No. 6,189,896).

Regarding claim 1, the Dickey et al. reference discloses a seal ring (10), wherein at least the contact side face (e.g. 16) of the seal ring includes concave portions (concave portion A and concave portion including channel B and C starting from concave portion A to the intersection of channels B and C) distanced away from each other in a circumferential direction (Fig. 3) and column portions (D) between the concave portions (Fig. 3),

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each of the concave portions being formed by a first deepest inclined portion (A) provided in an inner circumferential part of the side face of the seal ring (Fig. 3) and a converging portion (E) arranged on both sides of the deepest inclined portion in the circumferential direction (Fig. 3), each of the converging portions converging to a point (F, note that the applicant's point is actually two separate points on a plane) of an adjacent column portion that is closest to the inner circumference of the seal ring, and a second inclined portion (concave portion including channel B and C starting from concave portion A to the intersection of channels B and C) is provided on an inner circumferential side of the column portion and the converging portion (Fig. 3). Note that the seal of the Dickey et al. reference is capable of being mounted in a ring groove that receives a pressure from an oil supply.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickey et al.

Regarding claim 2, the Dickey et al. reference, as best understood, discloses the invention substantially as claimed in claim 1, including the a dimension between an outermost point of the first deepest inclined portion in the radial direction and the outer

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circumferential face of the seal ring being 0.4 mm or larger (Col. 3, Lines 39-47) and being equal to or smaller than $\frac{2}{3}$ of the thickness of the seal ring (Fig. 2).

However, the Dickey et al. reference fails to explicitly disclose the inclination angle of the first deepest inclined portion.

Discovering an optimum range of a result effective variable involves only routine skill in the art. Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a mechanical expedient. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have an inclination angle of the first deepest inclined portion be in the range of 8° to 45° as a matter of mechanical expedience and to control the amount of leakage past the axial faces (Col. 3, Lines 39-42).

Regarding claims 3 and 5, the modified Dickey et al. reference, as best understood, discloses the invention substantially as claimed in claims 1 and 2.

However, the modified Dickey et al. reference fails to explicitly disclose the inclination of the second inclined portion and a dimension of the second inclined portion in the radial direction.

Discovering an optimum range of a result effective variable involves only routine skill in the art. Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a mechanical expedient. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have an inclination angle of the second inclined portion be in the range of 8° to 45° and a dimension of the second inclined portion in the

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radial direction being in the range from $1/5$ to $1/2$ of a dimension from the inner circumference of the seal ring to an outermost point of the first deepest inclined portion in the radial direction as a matter of mechanical expedience and to control the amount of leakage past the axial faces (Col. 3, Lines 39-42).

Regarding claims 4 and 6-8, the modified Dickey et al. reference, as best understood, discloses the invention substantially as claimed in claims 1, 2, 3, and 5 respectively.

However, the modified Dickey et al. reference, as best understood, fails to explicitly disclose a width of the first deepest inclined portion and a width of the second inclined portion.

Discovering an optimum range of a result effective variable involves only routine skill in the art. Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a mechanical expedient. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a width of the first deepest inclined portion in the circumferential direction being 8 to 50 times as large as a width of the second inclined portion in the circumferential direction as a matter of mechanical expedience and to control the amount of leakage past the axial faces (Col. 3, Lines 39-42).

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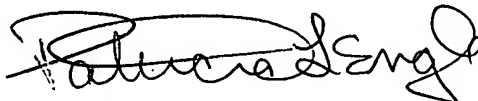
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gilbert Y. Lee whose telephone number is 571-272-5894. The examiner can normally be reached on 8:00 - 4:30, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patricia L. Engle can be reached on (571)272-6660. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GL
January 21, 2007

A handwritten signature in black ink, appearing to read "Patricia Engle", with a stylized flourish at the end.

Patricia Engle
Supervisory Examiner
Tech. Center 3600